

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-024307**Date Inspected:** 07-Jun-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Steve Jensen**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above.

This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

114 Meter elevation – South Tower – Splice Plates

Prior to the start of welding this QA Inspector observed induction heating blankets had been positioned over the areas to be welded in order to start the preheating process, gas troches were used to bring the preheat temperature to be within the range specified in the Welding Procedure Specification (WPS).

This QA Inspector observed ABF welding personnel Salvador Sandoval (#2202) using the Shielded Metal Arc Welding (SMAW) process at weld joint #165-Southwest, the bottom fillet weld in the overhead (4F) position. This QA Inspector was present and randomly observed as QC Inspector Steve Jensen verified the following welding parameters; 190 amperes using a 4.0 mm diameter E7018H4R electrode. The welding observed appeared to comply with ABF-WPS-D15-F1200A. This weld was completed at approximately 1030 hours this date, the induction heat blanket was positioned over the bottom half of the splice plate and the 3 hour post heating was started. ABF welding personnel Salvador Sandoval (#2202) began setting up equipment to start welding using the Flux Cored Arc Welding (FCAW) process in the vertical (3F) position on the top half of Splice Plate, weld #166-Southwest. This QA Inspector randomly observed as a gas torch was used to preheat the base materials to a minimum of 300°F. This QA Inspector randomly observed QC Inspector Steve Jensen verify the following

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welding FCAW parameters; 267 amperes and 21.7 volts at a travel speed of 100 mm per minute to produce a heat input of 3.48 KJ per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200.

This QA Inspector observed QC Inspector Steve Jensen perform a visual inspection on the bottom half of weld #166-South and mark various areas for additional welding and grinding. This QA Inspector randomly observed ABF welding personnel Xiao Jian Wan (#9677) using the SMAW process at weld joint #166-South, the bottom half of the splice plate to fill the various areas marked by QC. This QA Inspector was present and observed as QC Inspector Steve Jensen verified the following SMAW welding parameters; 138 amperes using a 3.2 mm diameter E7018H4R electrode. The welding observed appeared to comply with ABF-WPS-D15-F1200A. After, what appeared to be the completion of welding and grinding at this location this QA Inspector observed QC Inspector Steve Jensen perform a visual inspection on the bottom half of weld #166-South. QC Inspector Steve Jensen informed this QA Inspector he had accepted the weld, this QA Inspector performed a random visual verification and the welding appeared to comply with the contract requirements. ABF welding personnel Xiao Jian Wan (#9677) then set up to perform FCAW on the bottom half of weld #165-South in the vertical (2F) position. This QA Inspector observed as QC Inspector Steve Jensen verified the following welding parameters; 258 amperes and 22.1 volts at a travel speed of 85 mm per minute to produce a heat input of 4.02 KJ per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200.

This QA Inspector made multiple trips to the location where welding was being performed above and observed QC Inspector Steve Jensen periodically monitoring the welding. See photo below of the confined space at weld #166-South, which will be the typical for each tower. The work observed by this QA Inspector appeared to comply with the contract requirements.

### Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above and noted below there were no notable conversations.



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### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

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| <b>Inspected By:</b> | Hager,Craig | Quality Assurance Inspector |
| <b>Reviewed By:</b>  | Levell,Bill | QA Reviewer                 |

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